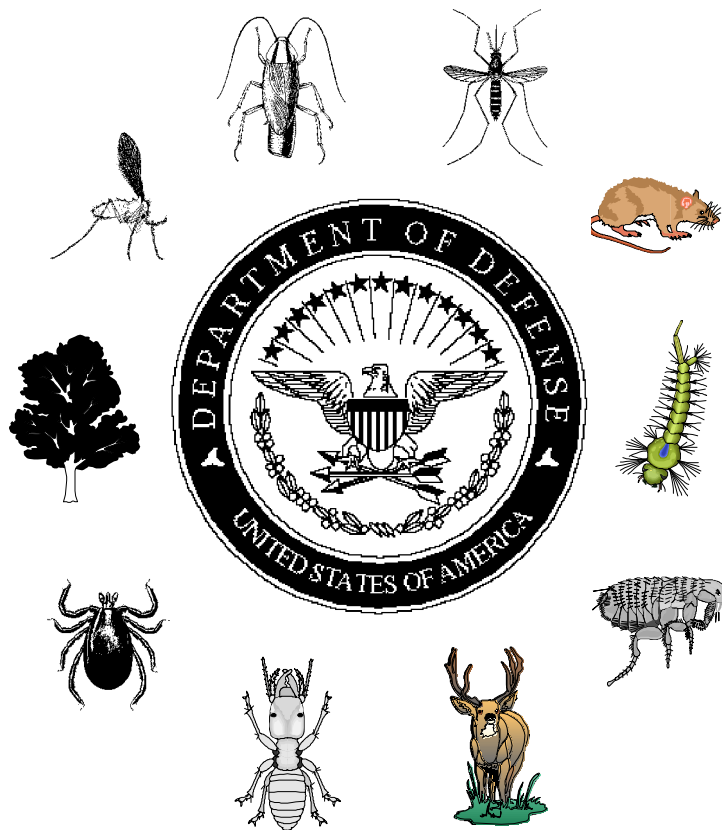


**OFFICE OF THE DEPUTY UNDER SECRETARY OF DEFENSE FOR
ENVIRONMENTAL SECURITY**

TECHNICAL INFORMATION BULLETIN

**ARMED FORCES PEST MANAGEMENT BOARD
DEFENSE PEST MANAGEMENT INFORMATION ANALYSIS CENTER**



MAY - JUNE 1997

**DEFENSE PEST MANAGEMENT INFORMATION ANALYSIS CENTER
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TECHNICAL INFORMATION BULLETIN (TIB)

RECIPIENTS The TIB is published by the Defense Pest Management Information Analysis Center to provide current information of interest to the DoD pest

management community. Comments, questions, and contributions are welcome. Please send them to: Chief, DPMIAC/AFPMB, Forest Glen Section, WRAMC, Washington, DC 20307-5001, or call Tel: (301) 295-7479, Fax: (301) 295-7483, DSN prefix 295. Reference to a commercial product or source in the Bulletin does not constitute DoD or AFPMB endorsement, unless specifically stated as a recommendation for DoD personnel. The Secretary of Defense has determined that publication of this periodical is necessary in the transaction of the public business, as required by law of the Department of Defense.

ANNOUNCEMENTS

1998 DoD Pest Management Workshop. Start planning now to attend the 1998 DoD Pest Management Workshop, which will be held February 22-27, 1998 at the Naval Air Station, Jacksonville, Florida. The theme for the 1998 workshop is "Force Protection and Environmental Stewardship." This theme integrates the DoD mission to protect our deployable forces from vector-borne diseases and our DoD installations and natural resources from pest damage while we enhance our protection of the environment. This triennial workshop is intended for DoD pest management professionals or their equivalent

Planning is underway for the workshop program, which will consist of opening and closing plenary sessions, medical and engineering sessions, and service specific sessions, poster presentations, and demonstration/training sessions. We invite your suggestions for topics and speakers and volunteer presenters for all of these program areas. All oral presentations will be by invitation from the AFPMB or the Military Services' Senior Pest Management Professionals responsible for the Service-Specific Sessions. At the 1998 workshop, working group sessions will be organized within the AFPMB committees, which will meet during the workshop. **On the final day of the workshop, February 27, the 157th meeting of the AFPMB will be held. This meeting will be in lieu of the AFPMB meeting that is normally held in Washington, D.C. in March.**

Please provide your written suggestions for topics, speakers, demonstrations, or poster sessions as soon as possible to the workshop coordinator, CAPT Herbert T. Bolton, AFPMB Research Liaison Officer, USDA, ARS, CMAVEP.O. Box 14565, Gainesville, FL 32604; fax (352) 374-5955; or e-mail: boltonht@acq.osd.mil His telephone number is (352) 374-5950. The next edition of the Technical Information Bulletin will contain an update and additional information for the workshop. In September 1997, the AFPMB will mail registration and program material for the workshop to DoD pest management professionals.

AFPMB Directory. It is time once again to update the DoD Directory of Pest Management Professionals. Please provide all information requested on the form at the back of this issue no later than 31 August, 1997. Your quick response

will enable us to ensure the accuracy and quality of our DoD Directory. Forward your input to Mrs. Trutt by Fax [(301) 295-7483] or regular mail (AFPMB, ATTN: DPMIAC (Mrs.Trutt), Bldg. 187, Forest Glen Section, WRAMC, Washington, DC 20307-5001).

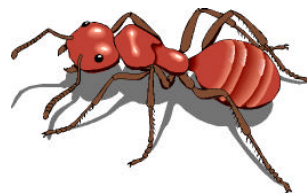
INTEGRATED PEST MANAGEMENT

Mole Crickets. Mole crickets cause extensive turf problems in the Southern U.S. The University of Florida has produced a comprehensive database and tutorials on mole crickets called "Alternative Methods of Mole Cricket Control." The software can be purchased from the University of Florida Publications Office or by accessing MCRICKET on the WWW in HTML format at:

<http://www.ifas.ufl.edu/~edu1/mcricket/>

The knowledge base contains information on biology, life cycle, identification, damage, and control. Tutorials cover control methods by chemicals, nematodes, and the red-eyed fly---- Entomology and Nematology News, University of Florida, Entomology and Nematology Department, June 19, 1997

Fire Ant Control Advances Researchers at the U.S. Department of Agriculture, Agricultural Research Service, Center for Medical, Agricultural, and Veterinary Entomology, Gainesville, FL, have investigated several



promising ways to manage the red imported fire ant, *Solenopsis invicta*, which now is established on 275 million acres in 11 southern states and Puerto Rico. The methods include the following:

- A new experimental insect growth regulator, teflubenzuron, prevents the fire ant from making chitin, a key component in the insect's exoskeleton. At dosages 22 times lower than a growth regulator now commercially available as a bait, a bait formulation of teflubenzuron reduced field populations of fire ants by 86% after 13 weeks and 91% after 17 weeks. After four weeks, the treated fire ant colonies had no brood (immatures).
- *Bacillus thuringiensis*, which is an effective control agent for many insects, is not active against fire ants. The ants have a filter in

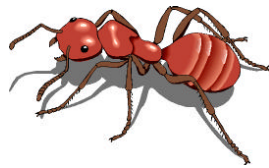
their digestive system that allows only passage of liquids and particles smaller than bacteria.

- Boric acid, once dismissed as having no activity against fire ants, could be an effective control agent if formulated at low dosages of less than one percent. In a laboratory study, a one percent boric acid concentration in sugar water reduced worker ants and brood 90 percent after six weeks.
- A parasitic phorid fly shows promise as a biological control agent for fire ants. The USDA is preparing to release these flies in further field trials (See the next article)---

ARS News Service, January 30, 1997

Potential Benefits of Fire Ant Biocontrol- Decapitating Phorid Flies.

Imported fire ants currently occupy almost the entire southeastern United States. Additional infestations have been found in Arizona and California. Fire ant populations in their South American homelands are about 1/5 the size of those normally found in North America. Escape from the numerous natural enemies in South America is a likely explanation for this observation because intercontinental



differences in fire ant densities do not appear to be related to differences in climate, habitat, or other factors investigated. Successful release of these flies and other biocontrol agents will not eradicate imported fire ants, but it could help tilt the ecological balance in favor of our native ants. If this happens, fire ant populations in the United States could be reduced to levels similar to those in South America.

Importation of successful biocontrol agents of fire ants would be a major benefit to citizens throughout the southeastern United States. Biocontrol agents could be especially useful in grazing lands where poison baits are usually too expensive to be economically feasible. They could also be very helpful in natural areas, such as state parks and national parks where use of wide-spectrum baits would be environmentally unacceptable. Lower populations of fire ants would save tens of millions of dollars annually in pesticide costs and crop losses. It would further benefit the environment by reducing pesticide use in urban and agricultural areas—a major

national goal. Reduction of fire ant populations would also help restore the natural biodiversity of ground-dwelling vertebrates and arthropods that existed before the fire ant invasion. Finally, fewer fire ants would also be a benefit to people who are severely allergic to even a single fire ant sting (42% of the population) and to many thousands of small children who are repeatedly stung by hundreds of fire ants when they accidentally step into the mounds.

Life history of *Pseudacteon* Decapitating Flies.

At least 20 species of *Pseudacteon* flies have been found attacking fire ants in South America. Up to seven species of these flies have been found at a single site. Each species has a distinctively shaped ovipositor that is presumably used in a lock-and-key fashion to lay eggs on a particular part of an ant's body. These flies appear to be common and active throughout most of the year, but different species are sometimes more active at different times of the day. Most species are broadly distributed across a wide range of habitats and climates.

Female *Pseudacteon* flies usually contain a hundred or more torpedo-shaped eggs. During oviposition, one egg is rapidly injected into the ant's thorax with a short hypodermic needle-shaped ovipositor. Shortly after hatching, maggots of *Pseudacteon* flies move into the heads of their hosts where they develop slowly for 23 weeks. Just prior to pupation, the third instar maggot appears to release an enzyme that dissolves the membranes that hold the exoskeleton together. The maggot then proceeds to consume the entire contents of the ant's head, a process that usually results in rapid decapitation of its living host. The headless body is usually left with its legs still twitching. Worker ants apparently carry the head capsule with the larva outside their nest several hours after the host is killed. The maggot then uses hydraulic extensions to push the mouth parts aside, after which it pupates within the empty head capsule, positioned so that the anterior three segments harden to form a plate that precisely fills the oral cavity. The remainder of the pupa remains soft and is protected by the ant's head capsule, which functions as a pupal case. Pupal development requires 2-3 weeks, depending on temperature. Adult flies are mature and ready to mate and oviposit about 6 h after emergence.

Adult *Pseudacteon* flies probably live a week or so in nature; however, high rates of activity associated with oviposition may shorten their life to 43 days. Adults will readily eat a little sugar water or honey

water if they accidentally contact it while running across a surface. However, flies are not attracted to honey, sugary solutions, flowers, or various kinds of fruits (fresh or canned) in laboratory tests.

During attacks, fire ant workers are keenly aware of the presence of phorid flies. A single female fly usually stops or greatly reduces the foraging efforts of hundreds of fire ant workers in only a minute or two. As soon as a fly appears, most workers rapidly retreat into exit holes or other cover. The flies inhibit fire ant foraging as long as they are present, often for periods of several hours. Reduced foraging activity appears to facilitate competition from ants that might otherwise be excluded from food sources in fire ant territories. The overall impact of these flies on fire ant populations is unknown; however, it is clearly sufficient to have caused the evolution of a number of phorid-specific defense behaviors.

Risk Assessment of Introducing the Decapitating Fly *Pseudacteontricuspis* into the U.S.

1. These parasitic flies will not be a risk to plants, crops, or any agricultural products and may provide many benefits.
2. They pose no health risk for humans and may provide considerable health benefits.
3. They pose no health risk to livestock or other domesticated animals and may provide health benefits as well.
4. The introduction of these flies will not be a risk to native wildlife or any native arthropods except perhaps some ants. Furthermore, they may considerably benefit natural biodiversity.
5. The *Pseudacteon* fly proposed for release does not present a realistic risk to native ants not in the genus *Solenopsis*.
6. The flies proposed for release present a small but acceptable risk to several native fire ants.

For further information contact---Dr. Sanford Porter, USDA-ARS, CMAVE, 1600S.W. 23rd Drive, P.O. Box 14565, Gainesville, FL 32604; 352 374-5914 or -5903;sdp@nervm.nerdc.ufl.edu

Food Quality Protection

Act. With the passage of the Food Quality Protection Act (FQPA), the Environmental Protection Agency has the monumental task of implementing the numerous and far-reaching



provisions of the legislation. Dr. Richard Kramer, a contributing technical editor for PCT magazine, recently made several assessments of possible impacts of the FQPA on the pest control industry. They include:

- Manufacturers may drop structural uses of their products as they attempt to balance the economics of maintaining registrations, reducing pesticide exposures to children, and preserving their largest market (agriculture).
- "Safer" reduced-risk pesticides will enter the marketplace. The marketplace, not EPA, will determine the efficacy of these products. As this process occurs, the registrations of time-tested products may be lost.
- Individual States will increase standards for private service technicians and private maintenance applicators---PCT Pest Control Technology Magazine, January 1997, pp. 60-61.

IPM Methods Wall Chart Available. Mr. William Gebhardt, NAVFAVHQ has produced a handy wall chart of IPM Methods that can be obtained free by sending a written request to DPMIAC/AFPMB, ATTN: Mary Trutt, Forest Glen Section, Walter Reed Army Medical Center, Washington, DC 20307-5001. Please include a peel-off return address label with your request. ---- COL Lawyer, DPMIAC.

IPM for Control of Insect Infestations in Hospitals

- In January 1996, large numbers of minute brown scavenger beetles (Lathridiidae, Coleoptera), were appearing within three operating rooms at Kenner Army Community Hospital, Fort Lee, Virginia. Upon microscopic examination, the beetles were identified as the plaster beetle, *Cartodere constricta*, a species associated with poorly ventilated, humid areas that support the growth of molds on which it feeds. Although cosmopolitan in distribution, these beetles can be found in proximity to areas with fresh plaster, damp wallpaper, or wet lumber.

An intensive search throughout the hospital revealed three potential sources of the infestation: (1) a new air-handling system located on the roof which extends into the interstitial space directly above the operating room complex, (2) a nearby wing on the same floor that had recently undergone large-scale renovation, and (3) newly installed, sheet-like, rubber roofing material on the roof above the complex. The exact source of the beetle infestation

was never positively identified.

Next, a sampling method was needed to pinpoint concentrations of beetles. Although one authority stated that minute brown scavenger beetles were not attracted to light traps, CDC miniature traps and ABC light traps (John W. Hock Company, and American Biophysics, respectively) with single-hoop collection nets, were used successfully to capture beetles within the interstitial space above the ceiling. Initially, only incandescent light sources were used, but on further experimentation, traps were subsequently fitted with commercial battery-powered (UV) blacklights. Over a four-day period, blacklight-fitted traps captured 648 beetles (77%), whereas traps fitted with incandescent lights captured only 193 beetles (23%) of the 841 insects collected. An active trapping program using blacklight-fitted traps was implemented and monitored daily.

Subsequent research indicated that there were several line-powered blacklight traps available commercially that would satisfy the need for permanent installation. For permanent installation within the interstitial spaces above ceilings. The following criteria were used prior to trap purchase, installation, and operation: (1) No electrocution-type traps were to be used, since traps of this type cause insects to explode, showering the area with insect particles that could possibly cause problems for hypersensitive individuals; (2) traps had to incorporate both blacklight bulbs and easily replaced glue boards; (3) no extension cords were to be used within the interstitial areas due to possible fire code violations and potential fire hazard; and (4) permanent electrical receptacles were to be "hard-wired" within pre-determined locations in the interstitial space. Of the traps researched, the Gilbert® 747GT Sticky Bear (registered trade mark of Gilbert Industries Inc., Jonesboro, AR) was chosen as the trap to be installed. After installation, all traps were monitored regularly and the glue boards replaced as necessary. Bulbs are normally replaced once a year, per manufacturer's recommendation.

While the traps were on order, extensive mechanical exclusion measures were undertaken to prevent beetle entry into the operating room complex. These measures included: (1) covering interior ducts and louvers with either sailcloth (inactive ducts) or tight-weave cheesecloth (active ducts) semipermanently attached to the edges of the ducts or louvers using

duct tape or aluminum tape (care was taken to ensure that tape pieces overlapped to prevent beetle entry); (2) placing 1/2" weather stripping along the inner edges of hinged access panels that led into the interstitial space; (3) applying silicone caulk around the edges of all instrument panels, switch plates, light fixtures, and small cracks, and filling larger areas with expanding foam (i.e., large spaces around recessed cabinets, pipes, sterilizing equipment, etc.); (4) taping plastic sheeting over all inactive ducts within interstitial spaces that led to the roof; and (5) covering active exterior ducts and louvers with fine-mesh aluminum screening.

Because beetles were gaining entry into the fluorescent light fixtures via small venting holes that could not be plugged, the fresnel panels were lowered and chinked with wadded strips of aluminum foil to eliminate gaps between the panel and the frame. After the panels were raised, the edges of the fixtures were taped to eliminate potential routes of entry. Large holes on the outside of the building were filled with expanding foam. It is important to note that expanding foams used on exterior surfaces for exclusion purposes should be used on exterior surfaces ONLY during the warmer months (above 60 degrees F), since foam will not expand thoroughly in cool months.

Additionally, it is very important to remember that high levels of sanitation within the interstitial areas must be maintained. Vacuum up all dead insects to prevent the occurrence of other insect pests that feed on insect remains, such as the varied carpet beetle, *Anthrenus verbasci*, which was found in one hospital with large quantities of dead insects within the ceiling interstitial space.

Through an active trapping program, extensive mechanical exclusion and improved sanitation, the problem with beetles entering the operating room complex at Kenner Army Community Hospital was solved. Identical methodologies were recommended and are currently being implemented to control seasonal infestations of cluster flies (*Pollenia rudis*) and multicolored Asian lady beetles (*Harmonia axyridis*) that occur during the cooler months in Army Community Hospitals at Fort Belvoir, Virginia and the United States Military Academy, West Point, New York. Point of Contact: CPT Jim Dennett, Entomological Sciences Division, USACHPPM, DSA-North, Fort Meade, Maryland (COM) 301-677-6205/6502, ext. 211; (DSN) 923-6205/6502, ext. 211.

RESERVE COMPONENT ISSUES

Vacancies for Military Entomologists in RC Units

- One of the potential applications of this column is



to help identify Reserve Component vacancies for military entomologists. Such information would be useful to personnel about to leave active duty as well as to RC personnel who seek other assignments in

new units or geographical locations. We currently have listings of vacant entomologist positions for



Army IMA ("Individual Mobilization Augmentee") program assignments and select Army drilling units. We hope this summer to compile a comprehensive summary of RC assignments (filled and vacant)

by unit, location, and point of contact for each of the component services. Once complete, this summary might be published yearly as an appendix to the DoD



Directory and could be updated regularly in this column or in some other forum. Information on many RC units is already available on the web and is accessible through DENIX.

Readers with information about actual or potential unit vacancies, or who seek information about such vacancies, should contact Dr. Bennett (LTC USAR) at (410) 671-1565; DSN 584-; FAX -1680, or COL Lawyer at (301) 295-7479; DSN 295-; FAX -7483. ---- Dr. Steve Bennett.

DoD Subdirectory for RCPMPs - Progress

Report - In May a letter was mailed to all DoD RC entomologists to seek authorization to publish unit and/or other appropriate mailing addresses and phone numbers in future editions of the DoD Directory. Responses have been trickling in, but many more are needed. Please respond to this letter and return it to DPMIAC, c/o Ms. Mary Trutt, either by mail or FAX at (301) 295-7483. If you've misplaced or never received the letter, please contact DPMIAC at (301) 295-7479 to request another copy. ---- Dr. Steve Bennett.

MEDICAL ENTOMOLOGY

Record Monkeypox Outbreak in Congo - Since January 1996, 92 clinical cases of monkeypox,

including three confirmed deaths, have occurred in 13 villages in the Katako-Kombe zone of the Sankuru subregion, Kasai Oriental, Democratic Republic of Congo (formerly Zaire). This is the largest cluster of human monkeypox cases ever reported and, unlike past outbreaks, most cases seem to have resulted from person-to-person transmission. Monkeypox is an orthopoxvirus, with zoonotic circulation in rain forests of central and western Africa, that causes a human syndrome clinically similar to smallpox, including pustular rash, fever, respiratory symptoms and, in some cases, death.

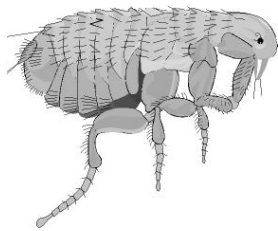
Before the current outbreak, only about 400 cases of monkeypox had ever been recorded, almost all from Congo, though a few cases had also been seen in Cameroon, the Central African Republic, Ivory Coast, Liberia, Nigeria and Sierra Leone. The 1996-97 outbreak is puzzling not only because of the high rate of person-to-person transmission but also because the proportion of case patients 15 years old and younger is substantially higher (27%) than in historic outbreaks (8%). As well, the case fatality rate is lower (3%) than in earlier outbreaks (11%). Cessation of smallpox vaccination in the late 1970s has resulted in an increase in the number of people susceptible to monkeypox, which might account for the magnitude of this outbreak. It is known that smallpox vaccine provides immunity against monkeypox.

Of the 89 case-patients for whom a history of previous contact is available, 65 (73%) reported contact with another case-patient within seven to 21 days before onset of illness and are thus considered secondary cases. Arboreal squirrels of the genera *Funisciurus* and *Heliosciurus* have been implicated as probable reservoirs of monkeypox in Congo, based on antibody data and a single viral isolate from *F. anerythrus*. Because monkeys are the primary source of protein for many African villagers, they also must be considered a source of virus. More studies are needed to confirm and quantify the potential for person-to-person transmission and to evaluate whether monkeypox infection can be sustained in a human population without the occurrence of new cases acquired through contact with wild animals. ---- Infectious Disease News 15(5): 1, 16-17, 23; MAY 97.

Mapping *Aedes albopictus* - Dr. Chester G. Moore, Centers for Disease Control and Prevention, Division of Vector-borne Infectious Diseases, Fort Collins, Colorado, is generating color-coded maps showing the dispersal of *Aedes albopictus* in the United States on a county by county basis. Each color indicates the

year of discovery in a given county, and the spectrum of colors clearly demonstrates the rate of spread and prevalence of this mosquito. Large areas in one color, such as Florida, may show the relationship between intensity of reporting and the presence of major mosquito control programs; alternatively, they may be artifacts of collecting by students or staff at university entomology departments. To obtain Dr. Moore's latest map, write to him at CDC, DVBD, P.O. Box 2097, Fort Collins, CO 80522.----AMCA Newsletter 23(2): 20, MAY 97.

Plague in California, 1996 -During the past year, the cooperative plague surveillance program of the California Department of Health Services (CDHS) identified *Yersinia pestis* activity in domestic and wild nonhuman mammals collected in 14 of 26 sampled counties. No human cases were confirmed. Plague activity was detected at over a dozen sites



control of vector fleas, was conducted at those sites where the risk of plague transmission was considered high. Diazinon 2D insecticide dust was used for burrow dusting and in bait stations at all flea control sites.

Sera from 32 domestic cats in seven counties were submitted to the CDHS laboratory for plague testing. Of these, eight samples from two counties (Kern, Nevada) demonstrated reactivity. This is the seventh consecutive year in which plague-positive domestic felids have been detected near the city of Truckee (Nevada County) through a network of alerted local veterinarians. Cats living in or visiting plague-endemic areas become infected through the bite of infected rodent fleas or through ingestion of infected rodent tissue. Untreated cats usually become severely ill and die, but they may transmit *Y. pestis* to humans through exudates from buboes, respiratory secretions, and sputum. In California, exposure to infected cats has been linked to at least four cases of human plague, three of which were fatal. Early diagnosis and treatment of feline cases is essential to reduce risk to humans. Cats suspected of having plague

that are heavily used by the public for recreational purposes. Precautionary information was posted and evaluation of human risk was performed at all sites. Plague control, including insecticidal



should be isolated, treated with appropriate antibiotics, and have specimens submitted for laboratory confirmation. Cat owners in plague-endemic areas should be advised to keep pets confined and away from rodents. When handling suspect cats, veterinary personnel should wear gloves, masks, and eye protection.

In 1996, sera from 786 wild rodents from 12 counties were submitted to the CDHS laboratory for plague testing. Of these, 48 specimens representing seven species (34 California ground squirrels, one pine squirrel, and 13 specimens of five species of chipmunk) had serologic evidence of *Y. pestis* exposure. These positive specimens were collected from sites in 11 counties, embracing the northern Sierra Nevada Mountains (Sierra County), the southern Sierra Nevada (Kern), the eastern Sierra Nevada (Mono and Inyo), the western Sierra Nevada (Butte and El Dorado), the San Emigdio Mountains (Ventura), the San Jacinto Mountains (Riverside), and the San Bernardino Mountains (San Bernardino). In addition, 10 California ground squirrels from the San Gabriel Mountains (Los Angeles) and 10 from the Palomar and Cuyamaca Mountains (San Diego) were tested and reported positive by the Los Angeles County Public Health Laboratory. A moribund chipmunk from Camp Richardson near South Lake Tahoe (El Dorado County) tested positive by direct fluorescent antibody test (DFA). A ground squirrel from Big Springs Campground, Inyo National Forest (Mono County), tested positive by DFA and culture. *Yersinia pestis* was isolated by mouse inoculation and culture from a pool of ground squirrel fleas from the Chuchupate Campground, Los Padres National Forest (Ventura County).

During 1996, serum, Nobut® and carcass specimens from 249 wild carnivores and omnivores (11 species) were submitted from 17 counties for plague testing. Of these, 30 samples from seven counties demonstrated reactivity to the fraction 1 (F1) antigen of *Y. pestis* by passive hemagglutination. Reactive species were coyote, black bear, bobcat, mountain lion, raccoon, feral pig, badger and gray fox. Two bobcats and a badger from foothills west of Palo Alto (Santa Clara County), and two coyotes, a bobcat and three feral pigs from the Diablo Range east of Gilroy had serological evidence of *Y. pestis* infection. These findings constitute the first evidence of plague in Santa Clara County since 1976 and the first evidence in the area east of Gilroy since 1945. *Yersinia pestis* is transmitted to carnivores and feral pigs through ingestion of infected rodent tissue or the bite of

infected rodent fleas. Though infection typically stimulates a detectable immune response in carnivores, evidence of clinical disease is rare. Thus, detection of plague antibody in these animals provides indirect evidence of plague activity in the rodent communities on which the carnivores prey. Such evidence helps in defining the extent of epizootic plague and determining trends in the geographic scope and intensity of rodent plague; it may also serve as an early warning of the potential for human exposure.----C.R. Smith,B.A. Wilson, M.A. Thompson &C.L. Fritz, Vector-borne Disease Section, Disease Investigations and Surveillance Branch, Department of Health Services, State of California Health and Welfare Agency: 5 pp., 9 APR 97.

Rabies Information for Travelers -Rabies vaccination is not a requirement for entry into any country; however, travelers to rabies endemic countries should be warned about the risk of acquiring rabies outside the United States. Rabies is almost always transmitted by bites that introduce the virus into wounds. Dogs are the main reservoir of the disease in many developing countries, but other animals may be involved and therefore all animal bites should be evaluated. Any animal bite or scratch should be thoroughly cleansed with a lot of soap and water. This treatment significantly reduces the risk of rabies. Also, local health authorities should be notified immediately; you will need rabies postexposure treatment. Upon returning to the United States, contact your physician or state health department.

Preexposure vaccination is recommended for persons living in or visiting (for more than 30 days) countries with endemic dog rabies. These include most countries in Central and South America, the Indian subcontinent, Southeast Asia, and most of Africa. Most island countries in the Caribbean and Oceania are free of rabies. Preexposure vaccination greatly simplifies, but does not eliminate, the need for postexposure treatment.

For international travelers, three 0.1 ml intradermal (ID) or three 1.0 ml intramuscular (IM) vaccinations are given over a 21 day period. If the ID route is chosen, the vaccinations should be initiated early enough to allow all three doses to be completed before departure. Persons who will also be taking mefloquine or chloroquine for malaria prevention should complete their three-dose ID vaccinations *before* these medications are begun, as they may interfere with the antibody response to rabies vaccine. Otherwise, the IM route should be

used; this route provides a sufficient margin of safety for persons taking antimalarial drugs.----Travel Information (revised 12 JUL 96), Centers for Disease Control and Prevention, <http://www.cdc.gov/travel/rabies.htm>

House Flies (*Musca domestica*) as Potential Vectors of *Helicobacter pylori* - The mode of transmission of *Helicobacter pylori*, a major pathogenic factor in gastroduodenal disease, is unknown. However, viable bacteria have been shown to be excreted in feces from infected individuals, and house flies habitually develop in and feed on excrement. Recently, Peter Grubel and colleagues in the Divisions of Gastroenterology, Pathology, and Microbiology, St Elizabeth's Medical Center of Boston, demonstrated that house flies can harbor viable *H. pylori* on their bodies and in their intestinal tracts; flies are also able to disseminate viable *H. pylori* in excreta, and they may therefore present a significant reservoir and be a vector of this bacterium.

Caged house flies were exposed to freshly grown *H. pylori* on agar plates. After a 6-hour feeding period, the plates were removed and replaced with sterile Petri dishes containing a droplet of sterile *brucella* broth. At regular intervals, small numbers of house flies were removed for microbiological and histological analysis, and the Petri dishes were replaced with fresh sterile plates and fresh drops of *brucella* broth. The flies' bodies, the flies' dissected alimentary tracts, and excreta on the Petri dishes were cultured for *H. pylori*, whose identity was confirmed by urease, catalase, and oxidase reactions and Gram staining. In contrast to control flies, viable *H. pylori* could be isolated from external body surfaces of exposed flies for up to 12 hours and from gut and excreta for as long as 30 hours after the initial feeding period. Histological analysis revealed *Helicobacter*-like organisms in the gut lumen and attached to intestinal epithelial cells.



These results may explain the fact that *H. pylori* infection is almost universal among adults in developing countries, the prevalence being 50% by age 5. The easy access for flies to outside toilets or open sewers and the flies' ability to carry *H. pylori* could explain the high prevalence of infection in the developing world. The use of closed sewage systems would break the chain of transmission. Such a transition from outhouses to indoor plumbing occurred in the United States at about the time of World War II. There has been a substantial

reduction in the prevalence of *H. pylori* infection among those born during or after World War II compared with those born before that time. The age of acquisition of infection is predominantly in childhood, and since infection is usually life long, the prevalence at a specific age reflects childhood prevalence rates for that cohort. Eastern Europe's infection levels are relatively high--90% of those born before 1960 in Poland are infected with *H. pylori*. But in Western Europe infection rates are closer to 50%. The variable use of indoor plumbing across Europe may explain these large national differences in the prevalence of *H. pylori*, which otherwise have eluded a coherent explanation.----Journal of Clinical Microbiology 35(6): 1300-1303, JUN 97.

***Bartonella henselae* and *B. clarridgeiae* in French Stray Cats**



Bartonella henselae is a bacterium that causes several human infections: cat scratch disease in immunocompetent individuals and bacillary angiomatosis and hepatic peliosis in immunocompromised patients. Other pathological manifestations associated with this bacterium are endocarditis, bacteremia, osteolytic lesions, pulmonary nodules, neuroretinitis, and neurologic diseases. The natural host of this bacterium is the domestic cat,

although no pathologic process has ever been identified in bacteremic cats. The prevalence of *B. henselae* ranges from 4 to 70% in pet, impounded, and formerly stray cats; corresponding figures for the recently described *B. clarridgeiae* or for active stray populations have not been available to date. However, in a novel study by Rémy Heller and colleagues at French medical institutions in Strasbourg and Malzéville, the prevalence of blood infection with both *Bartonella* species was described in 10 bands of actively stray cats inhabiting the town of Nancy in eastern France.

Among 94 stray cats trapped from the 10 bands, 50 blood samples (53%) yielded cultures positive for *Bartonella* species. Isolate identification was performed by sequencing the first 430 bases of 16S ribosomal DNA. Three types of sequences were obtained. The first (17 isolates, 34%) was identical to *B. henselae* Houston-1, and the corresponding strains were referred to as *B. henselae* type I. The second sequence type (18 isolates, 36%) was identical to that initially described as BA-TF, and the corresponding strains were referred to as *B.*

henselae type II. The third (15 isolates, 30%) was identical to that of the *B. clarridgeiae* type strain (ATCC 51734).

The risk of human *Bartonella* infection from stray cats is both direct and indirect. Stray cats do not allow themselves to be stroked, so their contacts with humans (scratching and biting) are relatively limited, and the risk of direct infection should be low. The risk of indirect infection is greater because pet cats are occasionally outside and can acquire *Bartonella* spp. if they are scratched or bitten by strays or if they are bitten by vector fleas (*Ctenocephalides felis*). These pet cats can then infect humans. Thus, stray cats are an important reservoir for *Bartonella* spp.----Journal of Clinical Microbiology 35(6): 1327-1331, JUN 97.

First Case of Human Granulocytic Ehrlichiosis in Europe

Previous serologic studies of European patients with a diagnosis of Lyme borreliosis have indicated that human granulocytic ehrlichiosis (HGE), an emerging tick-borne disease in North America, may also occur in Europe. Now Miroslav Petrovec, at the Institute of Microbiology and Immunology, Medical Faculty, University of Ljubljana, and colleagues at other European and American medical institutions, have documented the first bona fide European case of HGE. The victim was a 70-year-old woman from northwestern Slovenia who had a history of tick bite but who had not traveled outside the country during the 15 preceding years. Diagnosis was established by seroconversion to *Ehrlichia equi* and the HGE agent and by PCR with sequence analysis of the gene encoding the HGE agent 16SrRNA. These researchers suspect that the dense population of deer and small wild rodents in Slovenia may constitute a reservoir for the HGE agent as well as for other tick-borne agents of human disease. *Ixodes ricinus*, the most frequently encountered tick in Slovenia, is the probable vector.----Journal of Clinical Microbiology 35(6): 1556-1559, JUN 97.

Smoky Skies, Mosquitoes, and Disease A recent letter to the editors of *Science* by Forrest M. Mims III et al. suggests a link between regional scale biomass burning in the tropics and such seemingly disparate phenomena as respiratory disease, reductions in photosynthesis, and an increased incidence of infectious and mosquito-transmitted disease. In regions of intensive biomass burning, in particular the Amazon, the photosynthetically active spectrum of sunlight (wavelengths of 400 to 700 nanometers) is reduced approximately 35-40% for

two months. Ultraviolet-B (UV-B) in natural sunlight kills airborne bacteria, and exposing drinking water to normal intensities of UV-B has reduced diarrhea in Kenyan children by 33%. Thus, the sharply diminished (more than 80%) UV-B associated with the burning season in Brazil might enhance populations of infectious pathogens suspended in air and water.

There is an increasing incidence of yellow fever in Brazil, Bolivia, and sub-Saharan Africa. The larvae and pupae of some disease-transmitting mosquitoes (including *Aedes aegypti*, an important vector of yellow fever and dengue fever, and *Culex pipiens*, which can transmit encephalitis) are highly photophobic to the UV-A and green wavelengths of sunlight. During the 1995 burning season in Brazil, regional smoke reduced sunlight in the UV-A (240 nanometer wavelength) range as much as 74% and in the green range (500-nanometer wavelength) as much as 45% near Cuiabá, far from the region of maximum burning. Experiments with wild populations of *C. pipiens* show that, when given a choice of nursery sites with eight gradations of natural illumination, females deposit their eggs in the darkest nurseries, and their larvae avoid UV.

The possibility that severe aerosol loading in the tropics can cause respiratory disease, suppress photosynthesis, increase the number of darkened mosquito nurseries, and enhance the survival of pathogenic microorganisms suspended in air and water warrants investigation.----Science 276(5320): 1774-1775; 20 JUN 97.

Ecology of Lyme Disease

Risk. The current issue of American Scientist magazine contains an informative article, "The Ecology of Lyme-Disease Risk," by Dr. R. S. Ostfeld. In addition to providing an excellent summary of the natural history of Lyme disease and the life cycle of the vector *Ixodes scapularis*, the article reviews recent research findings on ecological factors that directly affect the risk of acquiring Lyme disease and habitats where individuals are most likely to encounter infected ticks. In the northeastern U.S., deer feed in oak forests in high numbers during the years when oak trees produce periodic bumper crops of acorns. This phenomenon is known as "masting." During the next season, these oak stands have heavy populations of newly hatched larval ticks. After "nonmast" years,



larval ticks are most abundant in other forest habitat types, such as maple-dominated forests, because deer tend to avoid oak at these times. The abundance and survival of white-footed mice are also closely tied to areas of high acorn production. Thus, the risk of being bitten by larval ticks in each of these forest types directly correlates with the masting of oaks and production of acorns. The emigration of mice from oak forests the year after masting to less-crowded but suboptimal habitats, such as maple forests or shrub-dominated fields, may explain why these habitats have highly infected nymphal ticks two years after masting in adjacent oak forests.

Dr. Ostfeld's research also indicates that reductions in deer populations have little effect on tick numbers in an area; however, infection rates for Lyme disease in immature ticks (and the risk for Lyme disease) are lower when the host community has high diversity rather than when only a few host species are available in an ecosystem. This factor may help explain why Lyme disease rates vary in different geographic areas of the U.S. The article also briefly discusses the impact of gypsy moth populations on Lyme disease and questions to be addressed should Lyme disease vaccines, awaiting FDA approval, become available.----American Scientist, July-August 1997, Vol. 85, No. 4, pp.338-346.

Human Lice, Maggot Therapy, Fleas and Flea-Borne Diseases, Ticks and Tick-Borne Diseases, House Dust Mite Allergy, and Delusional

Parasitosis. Dr. Kosta Y. Mumcuoglu, Laboratory Head in the Department of Parasitology, Hebrew University-Hadassah Medical School, Jerusalem, Israel, conducts research on these and other aspects of vector biology and medical entomology. Interesting summaries of his ongoing research and literature citations are posted on the world wide web (WWW) at:

<http://www.md.huji.ac.il/depts/parasitology/p-3-7.html>

His research described at the above website includes the following:

- Screening of 304 newly arrived immigrants from Ethiopia for ectoparasitic insect and mite infestations showed that 65% were infested with head lice, 39% with body lice, 10% with scabies and 4% with the human flea, *Pulex irritans*.
- Within four years of introduction of permethrin-based pediculicides in the Israeli market, local head louse populations had developed resistance to the insecticide.

- In tests using natural oils and DEET on cloth for repellent activity against human body lice, DEET and citronella were the most effective. Activity lasted 29 days. In a new bioassay using treated hairs, the repellency on hair of citronella and geraniol lasted 2 days; DEET was repellent for less than one day.
- Maggots of the sheep blowfly *Phaenicia sericata*, were used to successfully treat 15 patients with gangrene and osteomyelitis. These patients had not responded to extensive courses of antibiotics or surgical debridement.
- Two outbreaks of Mediterranean spotted fever, *Rickettsia conorii*, were investigated in two settlements in the Negev Desert. Several epidemiological factors affected the incidence of the disease in the two settlements. *Rhipicephalus sanguineus* was the dominant species in one settlement, while *R. turanicus* was predominant in the other. --- Medical Entomology and Acarology, <http://www.md.huji.ac.il/depts/parsitology/p-3-7.html>.

Malaria Bulletin. The Environmental Health Project, sponsored by the U.S. Agency for International Development, provides a number of information services, including reports, summaries of recently published journal articles dealing with all aspects of malaria, and annotated bibliographies on bednets and malaria, Chagas' disease, and dengue fever. The summaries are frequently updated with the release of new issues of publications and the annotated bibliographies contain updated citations on the subject topic. These services were previously available only through e-mail subscription; however, they are now available on the WWW at: <http://www.access.digex.net/~ehp/> --- Environmental Health Project, <http://www.access.digex.net/~ehp/>

E-MAIL TRAIL

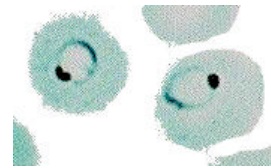
E-MAIL TRAIL. This section contains excerpts of recent e-mail traffic, forwarded to DPMIAC from various sources, that relate to interesting trends and developments in Medical Entomology or IPM. Entries are presented chronologically by category. Contributions, suggestions and comments from our

readership are welcome - COL Lawyer
<lawyerpg@acq.osd.mil>

MALARIA

June 1997

Several E-mail messages were received from a variety of sources reporting on imported cases of malaria in individuals returning to their homes in Canada, Europe and the United States after having traveled in West or South Central Africa. Several of these cases were fatal. Whereas most patients implemented chloroquine or mefloquine chemoprophylaxis while in the "endemic country" visited, none continued chemosuppressive therapy following their return home. None of the cases used personal protective measures other than chemoprophylaxis, such as insect repellents and bed nets.



June 6 1997

Source: Bulletin Epidemiologique Hebdomadaire
Via: Hacs Horvath
<varnubt@well.com>/<promed@usa.healthnet.org>
Subject: Malaria, Imported - Europe, 1994-95

Cases of imported (airport) malaria in Europe between 1994 and 1995 are summarized as follows:

France, 1994

- Seven cases of malaria due to *P. falciparum* were reported near Roissy Airport, including one death. Five of the cases were workers at Roissy Airport. The other two lived about 7.5 km away. It was speculated that *Anopheles* mosquitoes must have traveled in the personal cars of airport workers who lived immediately next door to the latter two patients.

France, 1995

- Two cases of suspected "airport" malaria were reported. One was a child who visited with its grandmother, who lives very near Paris' Le Bourget Airport (this airport receives many flights from Africa). The other case was a Haitian woman living in France, who had not left France for many years.

It was thought that she had helped her parent (returning from Haiti) unpack baggage.

Germany, 1994

- Two cases observed near Berlin.

Belgium, 1995

- Five cases observed.

June 10 1997

Source: Washington Fax

<subscriptions@washington-fax.com

Via: David Dickson

<david_dickson@chppm4_apgea.army.mil>

Subject: Malaria "Dwarfs" Other International Public Health Problems . . .

Every 20 seconds a child dies of malaria. The total population at risk worldwide is two billion to three billion persons. At least 300 million [to] . . . 500 million persons worldwide are infected, the National Institutes of Health (NIH) Director's Advisory Council (DAC). John LaMontagne, director of the Division of Microbiology and Infectious Diseases of the National Institute of Allergy and Infectious Diseases (NIAID) also told the DAC that every year at least one million people die of malaria in hospitals, where they can be counted, and another several million die of malaria each year in places where no counts are taken. Anthony Fauci, NIAID Director, told DAC members that malaria "is an enormous global public health problem that dwarfs everything else." Every year more than 27 million Americans are put at risk when they travel to infested parts of the world. . .

While the United States has always been involved in trying to deal with malaria, it was Harold Varmus, current NIH director, who . . . began to focus attention on the problem at an international meeting of scientists hosted by the U.S. National Academy of Sciences.

Right now about \$84 million is invested internationally on malaria research. NIAID provides \$19 million, while additional support comes from USAID, Burroughs Wellcome, The Wellcome Trust, the World Health Organization, and others. There is no cure and no vaccine for malaria. New and improved intervention strategies are crucial, the DAC was told.

TRYPANOSOMIASIS

June 22 1997

Source: Media reports, 10 June 1997

Via: Hacs Horvath

<varmint@well.com>/<promed@usahealthnet.org>

Subject: Trypanosomiasis - Angola & Equatorial Africa

Trypanosomiasis (sleeping sickness) has become a concern in equatorial Africa.

In Angola, there were 100 deaths in Mbanza Kongo (Zaire Province) in 1996. During the first four months of this year, there were 25 deaths in the province. Fears that it would spread into the neighboring provinces of Uige and Kwanza-Norte have been somewhat abated by the introduction of a project for combating trypanosomiasis (Angotrip), which has an 11-person team funded by German donors.

On 10 June an officer with the international medical corps in Nairobi said that Kenyans are at risk of getting the disease because it is on the rise in Congo, southern Sudan and northern Uganda where there is up to 25 percent prevalence.

The tsetse fly, which spreads the disease, is now also showing up in great numbers in Ethiopia.

June 25 1997

Source: GIDEON software program

Via: Dr. Steve Berger, Tel Aviv Medical Center

<mberger@post.tau.ac.il

Subject: Trypanosomiasis, African - Angola & Equatorial Africa

The following background information on African trypanosomiasis was abstracted from the GIDEON software program:

African trypanosomiasis is caused by two species of flagellate protozoa: *Trypanosoma* [*Trypanozoon*] *brucei gambiense* and *T. b. rhodesiense*. The natural reservoirs are a variety of large mammals, including deer [antelope], wild carnivores and cattle. The disease vectors are flies of the genus *Glossina* (the tsetse fly).

Following an incubation period of three to 21 days, the patient may develop a dermal chancre myalgia,

arthralgia, lymphadenopathy and recurrent fever. In later stages, neurological and mental changes ('sleeping sickness'), sensory disorders and heart failure are seen. Disease due to *Trypanosomabrucei rhodesiense* is more rapid and virulent than that due to *T. b. gambiense*.

Diagnostic tests include identification of protozoa in [cerebral spinal fluid], blood or lymph node aspirates; serology, and nucleic acid amplification.

Typical adult therapy may consist of intravenous suramin, 1 g on days 1, 3, 7, 14 and 21 (after a test dose of 100 mg); orpomentidine 4 mg/kg/d X 10d; or elfornithine.

Approximately 25,000 new cases are reported annually (the World Bank estimates 55,000 fatal cases per year). It is estimated that 250,000 in sub-Saharan Africa carry the parasite and 55 million are at risk.

LEISHMANIASIS

June 9 1997

Source: MPMC Weekly Electronic Newsletter

Subject: Leishmaniasis Threat Persists

Nine soldiers who were referred to the Walter Reed Army Medical Center infectious disease clinic for evaluation and treatment of leishmaniasis attended a meeting of the Leishmaniasis Diagnostics Steering Committee on 28 May. Their attendance provided a unique opportunity for the research team to observe active leishmaniasis lesions and hear from the soldiers their impressions of the effectiveness of Army products and policies for leishmaniasis prevention and treatment. Primarily due to inadequate training, none of the soldiers had adhered fully to the military's system of personal protective measures – properly treating their field uniforms with permethrin, using the military-issue 33% DEET topical insect repellent, and sleeping under bednets treated with permethrin. Infected soldiers had already begun intravenous Pentostam therapy, and evidence of substantial improvement was present. Pentostam is an unlicensed drug, given under an investigational new drug (IND) protocol, managed by the U.S. Army Medical Material Development Activity.

LOUSE-BORNE TYPHUS

May 6 1997

Source: WHO WER and Epidemiological Bulletin
E-Mail subscription service <owner-wer-reh@sun1.who.ch>

Via: <promed@usa.healthnet.org>

Subject: Louse-borne Typhus, Burundi

Nearly 24,000 cases of louse-borne typhus have been reported since the beginning of the year in an outbreak which is the largest to occur in over 50 years. Cases have been reported in six provinces but most occurred in the rural part of Bujumbura. New foci have been detected in Mutambu (Bujumbura Province), particularly in the districts of Karama, Burina, Gifugwe, Gase, Rutovu, Ntabo and Kabezi. During April, 216 cases were reported in a prison in Gitega Province, 890 cases in Muramvya Province, and 137 new cases in Bujumbura, bringing the total number of cases in 1997 to 23,889. WHO has joined in teams investigating the foci in Gitega, Muramvya and Bujumbura in April. In Mutambu, the teams developed a case definition for diagnosis and instituted treatment with a single dose of doxycycline. A committee for control of the outbreak in the most affected localities has been established in Mutambu.

LASSA FEVER

May 22 1997

Source: WHO WER and Epidemiological Bulletin
E-Mail subscription service <owner-wer-reh@sun1.who.ch>

Via: <promed@usa.healthnet.org>

Subject: Lassa fever - Sierra Leone

During the first four months of 1997, a total of 353 cases of Lassa fever with 43 deaths (12.2%) were reported. The number of cases increased from 45 with 7 deaths (15.6%) in January to 75 cases and 9 deaths (12.0%) in February and 147 cases with 20 deaths (13.4%) in March but decreased to 86 cases with 7 deaths (8.1%) in April. The resumption of civil unrest in Kenema in late April and brief closure of the Kenema hospital may have adversely affected reporting. During 1996, a total of 470 cases with 10 deaths (23.4%) were reported. While the majority of cases sought medical care in Kenema, four cases were identified in Freetown. Initially, cases seeking medical care in Freetown were transported to

Kenema, but an isolation ward is now being established in Freetown using health staff trained at the Lassa fever isolation ward in Kenema to ensure prompt management of suspect cases.

The Ministry of Health and Sanitation together with WHO and MERLIN is planning activities to prevent the spread of the disease and improve management of suspect cases. Key district health personnel will be included in a nation-wide training program on Lassa fever control that is planned for later in the year. The Ministry of Health and Sanitation is studying a plan for rodent control. Treatment with ribavirin was resumed in mid-April with the arrival of new supplies of the drug after the stock was depleted . . .

GLOBAL SURVEILLANCE

May 5 1997

Source: USAMRMC Weekly Electronic Newsletter, 2 May 1997

Subject: Global Surveillance

The USAMRMC (U.S. Army Medical Research and Materiel Command) has received \$1.5M dollars in new Program 8 funding to initiate a program called the DoD Surveillance and Response System for



emerging infectious diseases. The system will be a coordinated, joint service program to facilitate early recognition and

control of new disease problems that could impact on military readiness and national security. The Central Hub, located at the Walter Reed Army Institute of Research, will receive and analyze information from the six Army and Navy OCONUS infectious disease research laboratories. The DoD Surveillance and Response System will play an important role in meeting the challenges of reporting disease outbreaks, obtaining rapid diagnosis, and responding to assist in the control of outbreaks as they occur around the world.

BUBONIC PLAGUE

June 18 1997

Source: Los Angeles Daily News, Antelope Valley Edition

Via: Peter Cyrog

<Drzero@aol.com>/<promed@usa.healthnet.org>

Subject: Woman Hiker Diagnosed with Bubonic Plague

A 71-year-old Tehachapi-area woman has been diagnosed with bubonic plague, the second plague victim from that area since 1995. The unidentified woman, who came down with symptoms two weeks ago and remains hospitalized, apparently was bitten by fleas while walking in the hills around her home, west of the Golden Hills area. Kern County health officials said. "The lady walks through the woods on a regular basis as a portion of her exercise program," said Dr. Boyce Dulan, a spokesman for the Kern County Department of Public Health. "She noted she had flea bites on her extremities. She has noticed that on several occasions." The woman noticed symptoms around June 3. She went to a doctor and was given medicine but did not improve Dulan said. She then was sent to a hospital, where the illness was identified as plague. The case is still officially listed as probable plague because health officials are awaiting final test results.

The same disease that killed a third of Europe's population in the Middle Ages, bubonic plague is endemic among ground squirrels around Tehachapi, Lake Isabella, Frazier Park, and in the Angeles National Forest between Los Angeles and Antelope Valley. Kern and Los Angeles County health officials annually send out warnings for campers, hikers and residents in those areas to take precautions against the disease--mainly by avoiding ground squirrels and their fleas. While plague is common among wild animals in certain areas, it seldom spreads to humans. Statewide there have been six cases since 1994. The last case in Kern County involved a 23-year-old Tehachapi man who died in April 1995 after developing the more virulent pneumonic form of the plague.

Kern County and state workers set out traps Monday for squirrels and other wild animals in the area where the woman walked. Trapped animals and their fleas will be sent to a state testing laboratory, and results should be back in one to three weeks. One of the things the tests will show is if there is a greater than usual incidence of the plague organism, *Yersinia pestis*, among wild animals. However, the Tehachapi woman's illness is no indication that conditions this year pose any greater risk [to] humans.

HANTAVIRUSES

May 8 1997

Source: Joni Young, CDC Special Pathogens Branch <gzc8@CIDDVD1.EM.CDC.GOV>
Via: <promed@usa.healthnet.org>
Subject: Hantavirus Pulmonary Syndrome -USA:
Update 7 May

Since Hantavirus Pulmonary Syndrome (HPS) was first recognized in May 1993, 160 U.S. case-patients from 26 states have been laboratory confirmed by CDC and have been added to the national HPS registry. Of these 160, 39 were identified retrospectively, with onset of illness prior to May 1993.

To date, 3 case-patients with onset of illness in 1997 have been confirmed.

Cumulative descriptive demographic statistics for the 160 confirmed U.S. patients in the HPS Registry:

N=160
Male: 96 (60%)
White: 117 (73.1%)
Native American: 38 (23.8%)
Black: 4 (2.5%)
Asian: 1 (0.6%)
Hispanic: 19 (11.9%)
Age: Mean=36 [range 11-69]
Case Fatality Rate: 76 (47.5%)



For further information on HPS, CDC maintains a toll-free number: 1-800-532-9929. If you have specific questions, please contact your local state health department or Special Pathogens Branch at 404-639-1510.

June 6 1997

Source: Joni Young, CDC Special Pathogens Branch <gzc8@CIDDVD1.EM.CDC.GOV>
Via: <promed@usa.healthnet.org>
Subject: Hantavirus Pulmonary Syndrome -USA:
Update 6 June

We've confirmed 2 cases since 7 May Update, from Kansas and Wisconsin (Wisconsin's first case).

June 20 1997

Source: <promed@usa.healthnet.org>
Via: <kolds@aeahal.apgea.army.mil>
Subject: Hantavirus: Person-to-Person Transmission?

Hantavirus pulmonary syndrome is a rodent-borne zoonosis first recognized in the United States in 1993. Person-to-person transmission has not been reported; however, in the outbreak of 20 cases reported here, epidemiologic evidence strongly suggests this route of transmission.

Twenty-one and 20 days, respectively, after the index patient became symptomatic, his 70-year-old mother (patient B) and one of his doctors (patient A) contracted HPS. The doctor's spouse, also a doctor (patient C), became ill with HPS 27 days after her husband's first symptoms (19 days after his death). She traveled to Buenos Aires for medical care. In a Buenos Aires hospital, an admitting doctor (patient D) spent one hour taking a clinical history and examining her. The doctor (patient D) applied pressure to a venipuncture site on patient C's arm with multiple layers of gauze; no obvious blood contact occurred. The only other contact between this doctor and patient C occurred two days later, when the doctor briefly visited the hospital's intensive care unit to attend to another patient. Twenty-four days after attending patient C, the doctor became ill with HPS. The doctor (patient D) had not traveled outside Buenos Aires, and she reported no contact with rodents during the two months preceding her illness.

The probable transmission of hantavirus from patient C to her doctor (patient D) is the best epidemiologic evidence available to support the hypothesis that person-to-person transmission of hantavirus occurred during this outbreak. When considered separately, links between other Argentinean HPS patients are less convincing. However, when the contacts between patients are viewed collectively, the probability that person-to-person transmission played a major role in this outbreak strengthens.

ENVIRONMENTAL

June 6 1997

Source: The Associated Press
Via: <dbaumgar@aeahal.apgea.army.mil>

Subject: Eco-Corp

Some U.S. soldiers are gearing up to take on new duties in Central and South America: helping train warriors for the environment. In at least 32 Latin American and Caribbean nations, members of the U.S. Southern Command--may begin training local soldiers to guard rain forests and endangered species. The new green duties are a dividend of the post-Cold War era that has spread democracy, not an easy transition for countries. "This is a legitimate military issue," Timothy E. Wirth, Undersecretary of State for Global Affairs, told the Western Hemisphere Defense Environmental Conference on Tuesday. "This is not a bunch of trendy greens."

The Southern Command, which is relocating from Panama to Miami in late September, is one of nine unified military commands and is responsible for coordinating U.S. military operations in Central and South America. Its varied missions include human rights, military cooperation, and border conflicts in the Western Hemisphere, most with an eye toward environmental impacts. "Southern is unique in comparison to other unified commands because there is a real need--when you look at countries that have shifted to democracy over the last few years--to show them [that] guys wearing uniforms can be good people," said Navy Lt. Jane Campbell, a spokeswoman for SouthCom. "It's vastly different from what many of the citizens have known."

The green warriors fit with the thinking that a nation that has its environmental affairs in order is positioned to reap the rewards of its natural resources and [is] in better shape for the future. And the military already has people in the region who know each country's dynamics and [have] the expertise to solve problems. In the Panama Canal, for instance, SouthCom could help officials preserve the fragile water table that fills the canal and keeps it free of silt. Troops could help turn the Colombia-Venezuela border region--the scene of a decades-long dispute stemming from Colombian guerrilla incursions into Venezuela--into an international park. And they could help preserve Brazil's rain forests.

Liakat Ali Errol Alibux, Suriname's Minister of Natural Resources, said SouthCom's possible involvement in his nation was welcome. "We need international cooperation on our environmental issues to help sustain our development," he said.

The United States benefits too. More than 50,000 National Guard and military reservists train every year in Central and South America, learning to build schoolhouses and highways. The training is useful for those serving in a troop support capacity, like bridge-building engineers. "It's preparing people for stuff they may have to do in that environment," Campbell said.

SouthCom, with 6,000 members from all branches of the military, is required by the Panama Canal Treaty to move its 800-member headquarters off Panamanian soil by the end of 1999. SouthCom officials hoped the conference helped change people's attitudes about the range of jobs the U.S. Armed Forces undertakes. "People say humanitarian missions and the military are diametrically opposed, and we say no," Campbell said.

JAPANESE SPOTTED FEVER

May 30 1997

Source: Jim Chin <jchin@cdpc.com>

Via: kolds@aeha1.apgea.army.mil

Subject: Japanese Spotted Fever: Report of 31 Cases

Spotted fever group rickettsioses, which are transmitted by ticks, were long thought not to exist in Japan. Three clinical cases of Japanese spotted fever (JSF) were first reported in 1984. The causative agent was isolated and named *Rickettsia japonica*. Through October 1996, 31 cases were diagnosed as JSF in Tokushima Prefecture. Infected patients typically had acute high fever, headache, and characteristic exanthema; eschars were observed in 90% [of cases]. After the discovery of JSF, more than 100 cases were reported in southwestern and central Japan. Recent surveys show ticks to be the most probable vectors. As an emerging infectious disease, JSF is not commonly recognized by clinicians; therefore, even though it has not caused fatalities, it merits careful monitoring.

NATURAL RESOURCES

Forest Pests - Solicitations for FY 98 forest pest (insect and disease) suppression projects have been mailed out to component pest management



and natural resources program managers. Installation level managers should receive this information through their chain of command. This is a legislatively directed program where the U.S. Forest Service (USFS) provides funding to control insect or disease problems on federal land. The USFS also provides biological assessments to evaluate the extent of the insect or disease problem (call the local USFS office listed in the package). If you did not receive the solicitation package and feel you have an insect or disease pest problem, please contact your program manager for a copy. If for some reason the solicitation package has been lost, you may contact Dr. Pete Egan at 301-295-7485, DSN 295-7485, or E-Mail eganpj@acq.osd.mil for a copy.

Non-Native Invasive Plants - Federal Interagency Committee for the Management of Noxious and Exotic Weeds (FICMNEW) - Pulling Together: National Strategy for Invasive Plant Management has been distributed to the Components. If you have not received a copy, you can obtain one from your program manager, the web site: <http://bluegoose.arw.r9.fws.gov/ficmnewfiles/NatlweedStrategytoc.html> or you can contact Dr. Pete Egan at 301-295-7485, DSN 295-7485, or E-Mail eganpj@acq.osd.mil. The FICMNEW is developing a Weed Fact Book, in final draft, that is designed to give basic facts on weeds, their cost and ecological impact. The book is part of an effort to provide some information about the impact of weeds in each state in order to educate both the scientific community and the public. As soon as this publication becomes available we will notify you in the TIB.

Golf Course Subcommittee At the March meeting the AFPMB voted to form a subcommittee to deal with golf course issues. The purpose is to bring golf course, natural resources and pest management program managers and operators together to discuss issues of mutual concern, such as pesticide reduction, integrated pest management, training and certification, wildlife management, wildlife damage, and pesticide storage and handling facilities. Anyone interested in participating on this subcommittee should contact Dr. Pete Egan at 301-295-7486, DSN 295-7485 or E-Mail eganpj@acq.osd.mil.



From the U.S. Forest Service Short Subjects and

Timely Tips (SSTT) for Pesticide Users Issue No. 970-4 - EPA registered six new biological pesticides in first quarter FY 97. (EPA Pest Smart Update #5, March 1997.

1. German Cockroach Pheromone - trade name registered to Woodstream Corp., Lititz, PA for use in boric acid bait stations as a cockroach attractant.
2. Dihydroazadirachtin (trade name- DAZA) registered to Agridyne Technologies, Columbia, MD. The product is a hydrogenated form of the naturally occurring azadirachtin obtained from the seeds of the neem tree, which is native to India and Burma.
3. *Burkholderia cepacia* isolate (trade name Blue Circle) registered to Stine Microbial Products, Adel, IA as a fungicide for controlling damping-off disease on the roots of vegetables, fruits, nuts, vine crops, spices, ornamentals, greenhouse crops, turfgrasses, flowers, bulbs, and field crops.
4. Final registration of *Bacillus thuringiensis* CryIA(b) delta-endotoxin and the genetic material necessary for its production in corn (trade name YieldGard) was granted to Monsanto Co., St. Louis, MO.
5. *Bacillus thuringiensis* *kurstaki* M-200 (trade name Able) registered to Ciba-Geigy Corp., Greensboro, NC for controlling lepidopterous (larval moths and butterflies) pests in tree fruits, terrestrial small fruits and vegetables, tree nuts, alfalfa, corn, cotton, soybeans, peanuts, herbs, and spices and cranberries.
6. *Bacillus thuringiensis* *kurstaki* strain EG7826 (trade name Lepinox) registered to Ecogen, Inc., Longhorne, PA for controlling lepidopterous pests of numerous terrestrial food crops, ornamental plants, turf, nursery stock, shade trees, and forests.

It is always good to hear that progress is being made with the introduction of new products that are more specifically targeted and safer for nontarget species.

The Midwest Biological Control News Volume IV, Number 6 June 1997 has a thought-provoking article, "Rethinking Approaches to Commercializing Biopesticides," reprinted from *Phytoparasitica* Vol 25(3), 1997. One brief sentence summarizes the gist of the article: "In short, biologicals are not realizing

to any significant extent their fundamental mission of reducing chemical pesticide usage.” The author, Randy Gaugler, feels that products like *Bacillus thuringiensis* should actually be regarded as chemicals. A good read -- Pete Egan.

On the Internet: from SSTT -The latest on methyl bromide research and replacements can be found at <http://www.ars.usda.gov/is/np/mba/mebrhp.htm>

The March 1997 issue of Agricultural Research magazine has an article on new bee traps. The story can be found at <http://www.ars.usda.gov/is/pr/beetrap0497.htm>

National Pesticide Telecommunications Network (NPTN) also via the SSTT from Utah Pesticide and Toxic News, Vol. XV, No.3 March 1997
NPTN, a toll-free information service, provides objective, service-based information on a wide variety of pesticide-related subjects. The toll-free service is sponsored cooperatively by Oregon State University and the U.S. Environmental Protection Agency. It is open to questions from the public and professionals and is staffed by highly qualified and trained pesticide specialists who have the toxicology and environmental chemistry training needed to provide knowledgeable answers to questions about pesticides. Some of the pesticide-related subjects are: pesticide products, pesticide poisonings, toxicology, and environmental chemistry. NPTN can be reached 6:30 am to 4:30pm Pacific Time, Monday through Friday, excluding holidays. Saturday and Sunday service will begin this spring. Telephone: 1-800-858-7378, Fax (541) 737-0761, E-mail : nptn@ace.orst.edu.

TIB BITS

AFPMB to Take on Ordnance Fumigation Issue
Washington, we have a problem. The US Department of Agriculture, Animal and Plant Health Inspection Service (USDA-APHIS) has the authority to require that ordnance returning to the U.S. from overseas and found to be infested with a quarantinable pest be fumigated before it leaves the dock or airfield environment. On several occasions, snail-infested munitions returning from the Mediterranean have been fumigated at the Naval Weapons Station, Earle, NJ. The last time such a requirement arose, DoD discovered that the only fumigant previously acceptable to the Naval

Ordnance Command and the USDA, ethylene oxide/carbon dioxide (Carboxide) was no longer registered by EPA. The solution was to rent freezer railroad cars and freeze the snails. This was a very slow, expensive remedy. Just a few weeks ago, a planned shipment of ordnance to Australia was canceled for lack of an acceptable fumigant. The Aussies require methyl bromide fumigation of incoming (no pun intended) shipments to ensure that wood-destroying pests do not hitchhike in pallets or dunnage. The weapons folks are weary of MBr because of its corrositivity. Sulfuryl fluoride (Vikane) might be gentle enough to use on ordnance, but it may not kill the eggs of all wood borers. And there isn't much else out there to consider in the way of fumigants. The USDA-APHIS liaison to the AFPMB is looking into the challenge, as are the ordnance folks. The AFPMB Quarantine Committee and Real Property Protection Committee will document the issue and provide guidance in a planned Technical Information Manual (TIM).

Vivax Returns to DMZ -Indigenous Vivax malaria, absent from South Korea's Demilitarized Zone with North Korea for about 20 years has returned recently. The majority of the 107 cases reported in 1995 were in Korean military. The DMZ is a popular tourist attraction in the Republic of Korea.

Long Term Health Education and Training for Army Entomologists- Captain Jamie Blow offers the following advice to active duty Army entomologists seeking advanced degrees: Start looking at schools and programs at least a year in advance. Find a program set up so that you can finish a masters in two years or a PhD in three (Civilian students tend to stretch a masters program to three years and a PhD program to four to seven years.) The Army is not going to indulge you in an extended schedule. You will need to set an ambitious schedule and stick to it. Don't expect your professors to prod you; they will be busy writing grants, doing research and teaching. The Army, including the Surgeon General's entomology consultant -- currently COL Phillip Lawyer -- will track your progress, but you are responsible for finishing your program on time. Unless you are willing to pay out-of-pocket or become a scavenger, find a reliable, ongoing source of funding for your research (the Army is not one of the choices). Visit prospective schools; talk to professors about courses you will need based on your past transcripts, e.g. statistics, biochemistry, parasitology, etc. Make sure you are compatible with your professors. Pick a

project supported by existing insect colonies and established lab protocols. Don't forget that there are military assets, such as WRAIR and USAMRIID that can provide training and other assistance. There may be some frustrations. Entomology curricula at land grant colleges are strongly oriented towards agricultural insects. Required courses get canceled, forcing independent studies as an alternative. Walks or bus rides from distant parking lots can add an hour to your day. It can take months to get reimbursed for medical/dental bills. But the opportunity to grow professionally and personally makes it all worthwhile. ---- COL HarveyShultz.

Dr. Thomas Weller awarded Walter Reed Medal - Renowned scientist, educator, and international health policy advocate Dr. Thomas Weller was awarded the 1997 American Society of Tropical Medicine and Hygiene's Walter Reed Medal. His accomplishments are way too extensive to cover in this bulletin, so we'll just mention his military record, which included malaria control during WWII and a teaching stint at the Army Medical School. ---- COL HarveyShultz.

Attention Military Biomedical Researchers- NIAID has received a \$1.1 million budget increase from NIH to supplement research on emerging infectious agents. ---- COL HarveyShultz.

CDC Security Beefed Up- The Centers for Disease Control and Prevention received \$23 million in FY97 as part of the Administration's anti-terrorism budget amendment. The funds will be used to enhance security at CDC Headquarters in Atlanta and laboratories where dangerous infectious agents are kept. ---- COL HarveyShultz.

WHO Counterattacks Yellow Fever in Africa- The World Health Organization is concerned that urban yellow fever could break out in Africa, where the disease is at its highest level since vaccine was introduced in the 1930s. So far this decade, epidemics have affected Kenya, Ghana, Gabon, Liberia, Benin, and Nigeria (where one million cases have occurred). Since epidemics in the 1930s were brought under control with vaccine, WHO has launched a 5-year, \$190 million vaccine initiative. -- -- COL HarveyShultz.

TDR/WHO Task Force Focuses on Nondomestic Triatomines - TDR/WHO's goal is to adapt vector control strategies to interrupt transmission of Chagas' Disease in Central America

and northern South America. To this end they are studying the population dynamics of triatomines. Needed research will be conducted on distribution, genetic structures, sylvatic/domestic vector mobility, cost effectiveness of insecticide paints, optimum periodicity of chemical control, cost to prevent re-infestation of houses, insecticide efficacy, and serological survey of children to evaluate the effectiveness of control methods. ---- COL Harvey Shultz.

Buck Rogers, Move Over- Recognizing that each sex of each mosquito species has a unique wing beat frequency, the Maui Agricultural Research Center developed a photosensor that accurately identifies mosquitoes on the wing. Possible uses include population/biological studies, pollination studies, evaluation of repellents and attractants, and evaluation of pest control results. California Scientific Software at (800) 284-8112 is marketing the system. ---- COL HarveyShultz.

TIB BYTES

Attention Virtual Taxonomists- CAB International is marketing some good looking, jargon-free interactive software for arthropod identification. They claim that their electronic CABIKEY taxonomic keys can be used by nonspecialists to accurately identify arthropods in the field. The program includes full-color pictures and text to verify identification. The British-produced system chooses the most appropriate character set about which to answer questions, or lets you make that decision. They offer the less sophisticated TAXAKEY, which resembles traditional printed keys, and CABIKEY. Keys available now include major beetle families and mosquito genera of the world. CAB's New York City office can be reached at (212) 726-6490. ---- COL HarveyShultz.

PUBLICATIONS OF INTEREST

Bugs Mug Soldiers- MAJ Jeffrey Gambel of WRAIR and LTC Naomi Aronson of WRAMC co-authored an article for the Spring 97 *NCO Journal* that highlighted to our warfighting NCOs the importance and value of the military's system of personal protective measures, particularly the use of 33% extended-duration DEET skin lotion, permethrin applied to the uniform, and proper wearing of the battle-dress-uniform (BDU). "As

leaders, teachers and role models," Gambel and Aronson point out, "NCOs are the most important group to make certain that soldiers understand military pest management professional doctrine and properly use it in the field." To get the audience's attention, the authors pointed out that 250 military personnel acquired malaria during Operation Restore Hope in Somalia and that cases of dengue and cutaneous leishmaniasis have occurred in troops in other operations during the 1990s.

AFPMB Technical Information Memorandum No. 36 - Personal Protective Techniques Against Insects and Other Arthropods of Military Significance.

This Technical Information Memorandum (TIM) was adapted from U.S. Army Environmental Hygiene Agency (USAEHA) Technical Guide No. 174 by the same title through the efforts of the AFPMB Repellents Committee and the U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM). It provides preventive medicine information and guidance to DoD personnel who may come in contact with nuisance or disease-carrying arthropods, or who are responsible for protecting the health of such personnel. It describes the DoD Insect Repellent System and other techniques that provide maximum, safe protection. If you have not received a copy of this TIM and would like one, check the appropriate box on the last page of this issue and send the request to DPMIAC/AFPMB, ATTN: Mary Trutt, Forest Glen Section, Walter Reed Army Medical Center, Washington, DC 20307-5001. Please include a peel-off return address label with your request. - COL Lawyer, DPMIAC.

Operational Manual on the Application of Insecticides for the Control of the Mosquito Vectors of Malaria and Other Diseases. The DPMIAC, with permission of the World Health Organization, has reproduced 300 copies of this useful technical manual for distribution to DoD Pest Management Professionals. If you are a DoD Pest Management Professional and have not yet received your copy, just send a request to DPMIAC/AFPMB, ATTN: Mary Trutt, Forest Glen Section, Walter Reed Army Medical Center, Washington, DC 20307-5001. Please include a peel-off return address label with your request. - COL Lawyer, DPMIAC.

World Directory of Arthropod Vector Research and Control Specialists. This directory, published in cooperation with the American Mosquito Control Association and the Society of Vector Ecologists,

was last published in 1990. It contains useful listings, by country, of vector control specialists with their areas of specialty, professional affiliations and other pertinent information. If you wish to update your entry in the Directory or to be included for the first time, complete and submit the form located at the back of this issue. Questions concerning the World Directory should be directed to Dr. Eugene J. Gerberg at (352) 373-7384. - COL Lawyer, DPMIAC

SELECTED MEETINGS

JULY 15-18. 155th Meeting, Armed Forces Pest Management Board- Washington, DC. Col Bob McKenna, AFPMB, Forest Glen Sect., WRAMC, Washington, DC 20307-5001, Tel: (301) 295-7476, Fax: 7473, DSN Prefix 295, e-mail: mckennrj@acq.osd.mil



AUGUST 12-14. Seventh Annual Meeting of the Bird Strike Committee USA, at the Ramada Inn, Logan International Airport, Boston, MA. Sponsored by the Federal Aviation Administration, U.S. Air Force Bird Aircraft Strike Hazard Team, and U.S. Department of Agriculture Animal Damage Control Program. POC Laura Henze, USDA/ADC, 463 West Street, Amherst, MA 01002, Phone (413) 253-2403, FAX (413) 253-7577. Preregistration \$35 until 14 July, \$45 on site. Contact Ramada Inn, Logan, (617) 569-9300; rooms are \$89/night; mention BSC-USA.----Pete Egan.

AUGUST 18-22. Second Global Meeting on Parasitic Diseases with a Focus on Malaria - Hyderabad, India. Organized by the Indian Society of Parasitology in celebration of the 100th anniversary of Sir Ronald Ross's discovery of the malarial parasite. Corresponding address: Dr. V. P. Sharma, President, Indian Society of Parasitology and Director, Malaria Research Centre, 20, Madhuban, Vikas Marg, Delhi - 110 092, India; Phone: +91-11-224-7983 or 224 3006; Home: +91-11-688-5195; Fax: +91-11-221-5086 or 723-4234; e-mail: Ross@icmr.mrc.ren.nic.in

OCTOBER 16-18. The Second International Attractants Workshop will be held at the Florida Medical Entomology Laboratory in Vero Beach, Florida immediately preceding the SOVE Second

International Congress of Vector Ecology in Orlando, Florida. If you are interested in attending and/or participating in this workshop, contact Dr. Dan Kline, USDA-ARSm 1600 SW 23rd Drive, Gainesville, FL 32604. Phone (352) 5933; Fax (352) 374-5922; E-mail <dkline@gainesville.usda.ufl.edu>.

OCTOBER 19-24 Second International Congress of Vector Ecology. The Society for Vector Ecology is sponsoring the Second International Congress of Vector Ecology in Orlando, Florida. The Congress will be held at the Holiday Inn International Drive Resort. For further information and registration materials, contact Gilbert L. Challet, Secretary-Treasurer, P.O. Box 87, Santa Ana, CA 92702, USA Tel: (714) 971-2421, Ext. 148, Fax: (714) 971-3940.

OCTOBER 19-25 Pest Management 97, sponsored by the National Pest Control Association - Minneapolis, MN. NPCA Meetings Department, 8100 Oak Street, Dunn Loring, VA 22027, Tel: (800) 678-6722 or (703) 573-8330.

NOVEMBER 16-18 North American Conference on Pesticide Spray Drift - Portland, MA. For further information call (207) 581-3880 or (207) 278-2731.

NOVEMBER 18-21 156th Meeting, Armed Forces Pest Management Board- Washington, DC. Col Bob McKenna, AFPMB, Forest Glen Sect., WRAMC, Washington, DC 20307-5001, Tel: (301) 295-7476, Fax: 7473, DSN Prefix 295, e-mail: mckennrj@acq.osd.mil

DECEMBER 7-11. The American Society of Tropical Medicine and Hygiene will hold its 48th Annual Meeting in Orlando, Florida, at Disney's Coronado Springs Resort. For further information, please contact the American Society of Tropical Medicine and Hygiene, 60 Revere Drive, Suite 500, Northbrook, IL 60062. Phone (847) 480-9592; Fax (847) 480-9282; E-mail <astmh@aol.com>.

DECEMBER 13-18 Entomological Society of America Annual Meeting - Nashville, TN. Tel: (301) 731-4535, Fax: 4538, e-mail: meet@entsoc.org Information is also available on the World Wide Web: <http://www.entsoc.org/>

AUGUST 24-28, 1998 Third International Conference on Forest Vegetation Management, August 24-28 1998 Sault Ste. Marie, Ontario,

Canada. Registration is \$485 US after June 1, 1998 \$535. The themes are: Alternative Methods, Ecosystem Effects, and Ecosystem Management. For additional information contact: IFVMC #3, BioForest Technologies Inc., 105 Bruce Street Sault Ste. Marie, Ontario, P6A 2X6; E-mail: ifvmc3@nrcan.gc.ca; Tel: 705-942-5824; Fax: 705-942-8829; web site: <http://www.cif-ifc.org/cifweb/ifvmc3/ifvmc3.html>.

COURSES FOR DoD PEST MANAGEMENT PERSONNEL

If you see any information that needs to be corrected or updated, please contact LCDR Corneil, who can be reached at Tel: (301) 295-7479, DSN Prefix 295 or e-mail: cornelja@acq.osd.mil

ARMY SPONSORED COURSES

1. For information on the following courses, contact SSG Sutton, Academy of Health Sciences, U.S. Army, ATTN: MCCS-HPM, Fort Sam Houston, TX 78234-6100, Tel: (210) 221-5270/4278, DSN Prefix 471. Classes are conducted at Fort Sam Houston, TX.

Pest Management Certification Course (6H-F12/322-F12):

AUG 4-22 97

Recertification (6H-F13/322-F13):

AUG 25-29 97

2. For information on courses in Germany, contact MAJ Tom Logan, HQ, USACHPPM-EUR, CMR 402, Box 137, APO AE 09180, Tel: 49-6371-86-8540/44, DSN: 4868540/44. Classes are conducted at the USACHPPM-EUR Landstuhl, Germany.

3. For information on courses taught at the Environmental Training Center, contact Ms. Gail Boeff, ATTN: ATZRBT, Fort Sill, OK 73503-5100, Tel: (405) 351-2111, Fax: (405) 351-5722, DSN Prefix 639. The Environmental Training Center at Fort Sill, OK conducts a variety of environmental, natural resources and occupational health courses.

CHPPM-EUR Conducts Preventive Medicine Training. CHPPM-EUR conducted a 40-hour Preventive Medicine (PM) Specialist Refresher Workshop at Landstuhl,



Germany 14-19 Apr. Thirty-eight PM Specialists from V Corps and European Regional Medical Command units, plus 5 soldiers from the Royal Netherlands Army, attended the workshop. The workshop focused on the technical application of PM principles during field and contingency operations, highlighting experiences and lessons learned from recent deployments throughout the European and Central Command theaters. The comprehensive training program is unique to the theater and provides a critical training requirement for all PM Specialists. Application of the techniques discussed will enhance the PM Specialists' ability to accomplish a multiple array of PM missions during field deployments. CHPPM-EUR plans to offer the training course annually (or semi-annually if required), and to increase participation by US Air Force, US Navy, and multi-national units. (POC: CPT McPherson, DSN 486-7050, Landstuhl, Germany).

NAVY SPONSORED COURSES

1. For information on the following courses, contact Mr. F. De Masi, NDVECC, Naval Air Station Jacksonville, Box 43, Jacksonville, FL 32212, Tel: (904) 772-2424, Fax: (904) 7790107, DSN Prefix 942. Classes are conducted at the Disease Vector Ecology and Control Center, NAS Jacksonville, Jacksonville, FL.

Medical Entomology and Pest Management Technology (B-322-1050):
JUL 14-25 97

Pesticide Applicator Training (Core) (B322-1070), Instruction for Initial Certification:
SEP 8-15 97

Plant Pest and Vegetation Management (B-322-1071), Initial Certification for Categories 2, 3, 5 & 6:
SEP 16-19 97

Arthropod and Vertebrate Pest Management (B-322-1072), Initial Certification for Categories 7 & 8:
SEP 22 - OCT 1 97

Recertification Course (B322-1074), Category 8:
NOV 4-5 97

Operational Entomology Training (B322-1077), designed for A/D & Reserve PMTs, EHOs,

Entomologists, Epidemiologists & others assigned to PM units:
OCT 20-31 97

2. For information on the following courses, contact HM1 Clayton, NDVECC, 19950 Seventh Ave., NE, Ste. 201, Poulsbo, WA 98370-7405, Tel: (360) 315-4450, Fax: 4455, DSN Prefix 322. Classes are conducted at the Disease Vector Ecology and Control Center, Bangor, WA.

Medical Entomology and Pest Management Technology for Preventive Medicine Technicians (B-322-0017):
JUL 21 - AUG 15 97
NOV 6 - DEC 5 97

Medical Entomology and Pest Management Technology (Reserve Training) (B-322-1050):
SEP 8-19 97

Recertification Course (B322-1074), Category 8:
AUG 26-29 97
OCT 21-24 97

Shipboard Pest Management (B322-1075):
NDVECC(B)
JUL 9 97
AUG 20 97
SEP 24 97
OCT 29 97
NOV 19 97
DEC 10 97



3. For more information about the following course, contact Mr. Melvin Marks, Southern Division, Naval Facilities Engineering Command, P.O. Box 190010, 2155 Eagle Drive, North Charleston, SC 29419-9010, Tel: (803) 820-7019, FAX: (803) 820-7024, DSN Prefix: 583. Course is conducted at the Hilton Hotel, Cherry Hill, NJ.

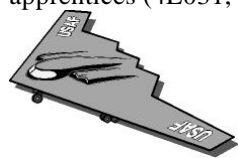
AIR FORCE SPONSORED COURSES

1. For information on courses at Sheppard AFB, contact the Programs Division, 2AF/DOP Keesler AFB, MS 39534-5000, DSN: 597-1336. For information on course content, refer to AFCAT 36-2223, USAF Formal Schools or contact: Mr. Dale Hess, 366 TS/TSIM (Training Squadron/Training Squadron, Instructional Mechanical), 727 Missile Road, Sheppard AFB, TX 76311-2254, DSN: 736-5790, Fax: 3345. Classes are conducted at

Sheppard AFB, TX.

2. For information on the following course, contact Maj Terry Carpenter, USAF School of Aerospace Medicine/EH, Brooks AFB, TX 78235-5123, Tel: (210) 536-2058/59, DSN Prefix 240.

Operational Entomology Course (OEC) - #B30ZY43M3-000 is a two-week training course that includes vectorbionomics and vector-borne disease profiles, surveillance and control of vectors and vector-borne diseases, and information, intelligence, and perspectives on developing country operations during exercises, hostilities, and natural disasters. Academic instruction, practical exercises and field experiences simulate actual vector-borne disease surveillance and control situations. The course is designed to provide training for the following Air Force specialties and DoD personnel: public health officers (43H1/3); public health apprentices (4E031, E-2 and above with completion



of 5-level CDC and the recommendation of your supervisor), journeymen (4E051), craftsmen (4E071), or superintendents (4E091); medical entomologists (43M1/3); flight surgeons (48A1/3 or 48P1/3); pest management apprentices (3E433, E-2 and above with completion of 5-level CDC and the recommendation of your supervisor), journeymen (3E453), craftsmen (3E473), or superintendents (3E490 with a prior AFSC 3E433, 3E453, and 3E473), or equivalent civilian pest management personnel; and other military and civilian public health and pest management personnel with the consent of the faculty. Quotas are obtained through the Unit or MAJCOM Training Managers. Army and Navy personnel may contact USAFSAM/EH to request attendance in OEC and are admitted as slots become available.

JUL 14-25 97

AUG 18-29 97

SEP 8-19 97

3. For information on the following course, contact Dr. Terry L. Biery, 757 AS/DOSE, YARS, Vienna, OH 44473-5000, Tel: (330) 392-1111/1178, DSN Prefix 346.

Aerial Application of Pesticides (Certification) - #AAP-001 is a one-week course that addresses the tenets and methodologies for aerial application of pesticides, with an emphasis on operational aspects and military applications. The course includes general principles, legal aspects, contracts, map

types and preparation, spray system calibrations, aerial spray math, DoD spray systems, meteorological effects, occupational health and safety, operations and mission support, disease control, pilot's view, private applicator's view, environmental aspects, computer modeling, swath and droplet characterization, pesticide monitoring, public relations, contingency wartime usage, spill prevention and containment, and other pertinent operational issues involving the use of aerial spray. The course features guest lecturers from the U.S. Army, U.S. Navy, U.S. Department of Agriculture, private applicator firms, and other government agencies.

FEDERAL REGISTER

VOL 62 No (1-30 April 1997)

16-18559-72 **Fish and Wildlife Service, Interior (FWS)** - Action - Notice of Decision on U. S. Submissions to Amend the Appendices to the Convention on International Trade in Endangered Species of Wild Fauna and Flora - Species Changes Proposed by the United States for the Convention on International Trade in Endangered Species of Wild Fauna and Flora.

17-18731-37 **FWS** - Action - Notice of Amendments to CITES Appendices Proposed by Foreign Countries and Public Meeting - Foreign Proposals to Amend Appendices to the Convention on International Trade in Endangered Species of Wild Fauna and Flora.

23-19747-50 **Environmental Protection Agency (EPA)** - Action - Notice - Notice of Receipt of Requests to Voluntarily Cancel Certain Pesticide Registrations.

23-19777-78 **FWS** - Action - Notice of Public Workshop - Workshop to Obtain Input for the Development of Habitat-Based Recovery criteria for the Grizzly Bear (*Ursus arctos horribilis*).

24-19936-37 **FWS** - Action - Final Rule - Disposition of Surplus Range Animals.

25-21412-518 **Office of the Secretary USDA** - Action - Semiannual Regulatory Agenda.

25-21790-879**Office of the Solicitor, Interior** - Action - Semiannual Regulatory Agenda.

25-22295-424**EPA** - Action - Semiannual Regulatory Agenda.

28-22902-03 **National Marine Fisheries Service, (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce** - Action - Proposed Rule Request for Comments - Taking and Importing Marine Mammals; Taking Marine Mammals Incidental to Naval Activities.

28-22903-04**NMFS, NOAA** - Action - Proposed Notice of Finding and Request for Information - Listing Endangered and Threatened Species and Designating Critical Habitat: Petition to Revise Critical Habitat Designation for Snake River Spring/Summer Chinook Salmon in Idaho.

29-23202-11**FWS** - Action - Proposed Rule; ETWP; Proposed Establishment of a Nonessential Experimental Population of Black-footed Ferrets (*Mustela nigripes*) in Northwestern Colorado and Northeastern Utah.

30-2377-92**FWS** - Action - Final Rule - ETWP; Final Rule to List the Barton Springs Salamander (*Eurycea sosorum*) as Endangered.

30-23425**EPA** - Action - Notification to the Secretary of Agriculture - Worker Protection Standard, Glove Requirements; Notification to the Secretary of Agriculture.

30-23435**NOAA** - Action - Notice of Intent to Evaluate - Evaluation of Coastal Zone Management Program and National Estuarine Research Reserves.

30-23447-48**EPA** - Action - Notice of Approval of Certification Plan - Department of Defense Plan for Certification of Pesticide Applicators.

30-23449-55**EPA** - Action - Notice - Voluntary Cancellation of Certain Pesticide Products.

VOL 62 No 1-104 (1-31 May 1997)

1-23785-88**FWS** - Action - Notice of Conservation Agreement and Document Availability - Notice of an Interagency Agreement for the Conservation of the Coral Sand Dunes Tiger Beetle (*Cincindela lambata albissima*).

5-24345-55**NMFS, NOAA** - Action - Final Rule - Threatened Fish and Wildlife; Change in List Status of Steller Sea Lions (*Eumetopias jubatus*) under the Endangered Species Act.

5-24387-88**FWS** - Action - Proposed Rule; Notice of Public Hearings and Extension of Comment Period - ETWP; Extension of Comment Period and Notice of Public Hearings on Proposed Endangered Status for the Preble's Meadow Jumping Mouse (*Zapus hudsonius preblei*).

5-24388**FWS** - Action - Proposed Rule; Reopening of the Comment Period - ETWP; Reopening of Public Comment Period on the Proposed Rule to List the Wild Manzanita as Threatened.

5-24503-4**FWS** - Action - Notice of Document Availability - Notice of Availability of the Draft Conservation Strategy for the Southern Rocky Mountain Population of the Boreal Toad (*Bufo boreas boreas*) for Review and Comment

6-24632-33**FWS** - Action - Proposed Rule; Notice of Extension of Comment Period - ETWP; Notice of Extension of Comment Period on Proposed Threatened Status for the Flat-tailed Horned Lizard (*Phrynosomamcalli*).

8-25201-02**FWS** - Action - Cancellation of Notice of Intent to Prepare an Environmental Statement - Notice of Intent to Prepare an Environmental Impact Statement for Proposed U. S. Fish and Wildlife Service Habitat Protection Activities in Selected Areas Within the Western Portions of Washington, Oregon, and Northern California.

15-26757-70**FWS** - Action - Proposed Rule; ETWP; Proposed Endangered Status for Ten Plant Taxa from Maui Nui, Hawaii.

20-27617-18**FWS** - Action - Notice of Availability of an Environmental Assessment and Finding of No Significant Impact, and Receipt of an Application for

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an Incidental Take Permit for the Regional Habitat Conservation Plan for the Red Cockaded Woodpecker on Private Land in the East Texas Pineywoods.

22-27973-78 **FWS** - Action - Final Rule; ETWP; Determination of Threatened Status for *Helianthus eggertii* (Eggert's Sunflower).

27-28653-57 **FWS** - Action - Notice of 12-Month Petition Finding; ETWP; 12-Month Finding for a Petition to List the Contiguous United States Population of the Canada Lynx *Lynx canadensis*.

28-28891-92 **FWS** - Action - Notice - Coastal Barrier Improvement Act of 1990 (P. L. 101-591); Amendments to the Coastal Barrier Resources System.

29-29091-98 **FWS, NMFS, NOAA** - Action - Proposed Rule - No Surprises Policy.

30-29286-8 **Animal and Plant Health Inspection Service, USDA (APHIS)** - Action - Interim Rule and Request for Comments - Gypsy Moth Generally Infested Areas.

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